



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

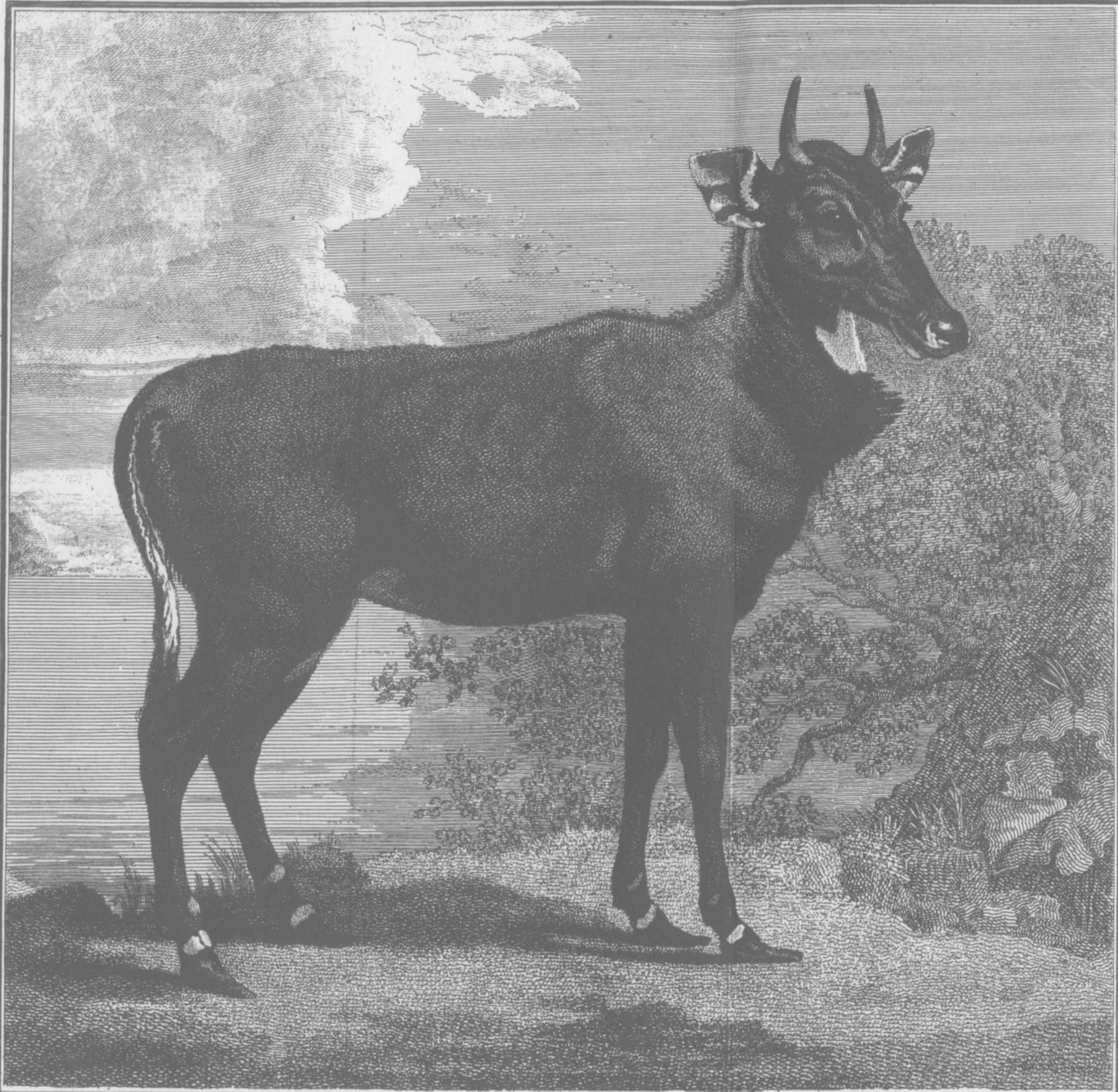
Received November 15, 1770.

XXI. *An Account of the Nyl-ghau, an  
Indian Animal, not hitherto described:*  
By William Hunter, M. D. F. R. S.

Read Feb. 28,  
1771.

**A**MONG the riches which, of late years, have been imported from India, may be reckoned a fine animal, the Nyl-ghau; which, it is to be hoped, will now be propagated in this country, so as to become one of the most useful, or at least one of the most ornamental beasts of the field. It is larger than any ruminant of this country, except the ox; its flesh probably will be found to be delicious; and, if it should prove docile enough to be easily trained to labour, its great swiftness, with considerable strength, might be applied, one would think, to valuable purposes.

Good paintings of animals give much clearer ideas than descriptions. Whoever looks at the picture, which was done under my eye, by Mr. Stubbs, that excellent painter of animals (see TAB. V.), can never be at a loss to know the Nyl-ghau, wherever he may happen to meet with it. However, I shall attempt a description of the animal; and then give as much of its history as I have been hitherto able to learn. The account will be imperfect: yet it will give naturalists some pleasure in the mean time to know



Geo. Stubbs pinx.

J. A. Bassett sc.

know even a little of a large and elegant animal, which has not hitherto been described, or painted.

At first sight, the male Nyl-ghau struck my imagination with being of a middle nature, between black cattle and deer; such an animal as we might suppose a mule would be, that was the produce of those two species of beasts. In size, it is as much smaller than the one, as it is larger than the other: and in its form there is a very apparent mixture of resemblance to both. Its body, horns, and tail, are not unlike those of a bull; and the head, neck, and legs, are very like those of deer.

**COLOUR.** The colour, in general, is ash, or grey, from a mixture of black hairs and white: most of the hairs are half white, and half black; the white part is towards the root. The colour of its legs is darker than that of its body; the same thing may be said of its head, with this peculiarity, that there the darker colour is not general and uniform, but some parts are almost quite black. In some parts to be mentioned hereafter, the hair is of a beautiful white colour.

**TRUNK.** The height of the back, where there is a slight eminence over the shoulder-blade, is four feet and one inch; at the highest part, immediately behind the loins, it is only four feet. The general length of the trunk, as seen in a side view, from the root of the neck to the pendulous tail, is about four feet; which is nearly the height of the animal; so that, in a side view, when it stands with its legs parallel, its back and limbs make nearly three sides

of a square, and the ground upon which it stands makes the fourth.

Round the body, immediately behind the shoulder, it measures four feet and ten inches; and a little more just before the hind-legs; but this last dimension, no doubt, will vary considerably, as it happens to be more full or empty of food and drink.

**HAIR.** The hair on the body in general is thinner, more bristly, and stronger, than on our black cattle. On the belly, and upper part of the limbs, it is longer and softer than upon the back and sides.

**MANE.** All along the ridge or edge of the neck and back, as far as the posterior part of the hump which is over the shoulder-blades, the hair is blacker, longer, and more erect; making a short, and thin, upright mane.

The umbilical and hypogastric regions of the belly, the inside of the thighs, and all those parts which are covered by the tail, are white. The *præputium penis* is not marked with a tuft of hair; and the sheath of the *penis* projects very little.

**TESTICLES.** The testicles are oblong and pendulous, as in a bull.

**TAIL.** The bones of the tail come down to within two inches of the top of the *os calcis*. The end of the tail is ornamented with long black hair, and likewise with some white, especially on the inside. On the inside of the tail, except near its extremity, there is no hair; and on the right and left

left there is a border of long white hair, which makes it on the inside look like a feather.

**LEGS.** The legs are small in proportion to their length; more so than in our black cattle, and rather less so than in our deer. The length of the fore-leg is a little more than two feet and seven inches. There is one white spot on the fore part of each foot, almost immediately above the large hoofs; and another smaller white spot before the small hoofs: above each of the small hoofs, there is a remarkable tuft of long white hair, which turns round in a flat curl. The large hoofs of the fore-leg, are of an awkward length. This was very observable in every one of the five individuals of this species which I have seen; yet it was suspected to be the effect of confinement; and the examination of the hoof, in the dead animal, proved that it was so.

**NECK.** The neck is long and slender, as in deer; and when the head is raised, it has the double turn of the Italic letter *S*. At the throat, there is a shield-like spot of beautiful white hair; and lower down, on the beginning of the convexity of the neck, there is a mane-like tuft of long, black hair.

**HEAD.** The head is long and slender. From the horns, it rises upwards and backwards to join the neck. Its length, from the horns only to the point of the nose, is about one foot two inches and three quarters.

**Nose.**

**Nose.** The partition between the nostrils was artificially perforated for fixing a cord, or bridle, according to the Eastern custom of tying up or leading horned cattle. The nostrils are very long, in a direction almost parallel to the mouth, and are widest at their anterior end.

**Mouth.** The *riktus oris* is long; and as far as this reaches, the lower jaw is white: so is the upper lip, as far as the nostril.

**Teeth.** There are six grinders in each side of each jaw, and four incisor teeth in each half of the lower jaw. The first of the incisors is very broad; and the rest smaller in gradation, as they are placed more outwards or backwards.

**Eyes.** The eyes in general are dark coloured; for all of the *conjunctiva* that can be commonly seen is of that complexion. In an oblique or side view, the *cornea*, and all that is seen through it, is blue, like burnished steel. The pupil is oval, or oblong, from side to side; and the *iris* is almost black.

**Ears.** The ears are large and beautiful, above seven inches in length, and spread to a considerable breadth near their end. They are white on their edge, and on their inside; except where two black bands mark the hollow of the ear with a zebra-like variety.

**Horns.** The horns are seven inches long; they are six inches round at their root, and growing smaller

smaller by degrees, they terminate in a blunt point. At their root they have three flattened sides, divided by so many angles: one of the angles is turned forwards, and consequently one of the sides backwards. This triangular shape is gradually less perceptible towards the extremity. At the root there are slight circular wrinkles, in proportion to the age of the animal. The body and point of the horn is smooth, and the whole of a very dark colour. They rise upwards, forewards and outwards at a very obtuse angle, with the forehead or face. They are gently bended, and the concavity is turned inwards, and a little forewards. The distance between them at the roots is three inches and a quarter, at the points six inches and a quarter, and at their most hollow middle parts less than six inches.

**FOOD.** It eats oats, but not greedily; is fonder of grafs and hay\*; but is always delighted with wheat bread. When thirsty, it would drink two gallons of water.

**DUNG.** Its dung is in the form of small round balls, of the size of a nut-meg; and it passes a quantity of these together, with a rushing sound.

**MANNERS.** Though it was reported to have been exceedingly vicious, it was in reality a most gentle creature while in my custody, seemed pleased with every kind of familiarity, always licked the

\* General Carnac informs me, that no hay is made in India; their horses are fed with grafs fresh cut, and a grain of the pulse kind, called *Gram*.



hand which either stroaked, or gave it bread, and never once attempted to use its horns offensively. It seemed to have much dependance on it's organs of smell, and snuffed keenly, and with noise, whenever any person came within sight. It did so likewise when any food or drink was brought to it; and was so easily offended with a smell, or so cautious, that it would not taste the bread which I offered, when my hand had touched oil of turpentine or spirits\*.

Its manner of fighting is very particular: it was observed at Lord Clive's, where two males were put into a little inclosure; and it was related to me by his Lordship, thus: While they were at a considerable distance from each other, they prepared for the attack, by falling down upon their fore-knees; then they shuffled towards each other with a quick pace, keeping still upon their fore-knees, and when they were come within some yards, they made a spring, and darted against each other.

All the time that two of them were in my stable, I observed this particularity, *viz.* that whenever any attempt was made upon them, they immediately fell down upon their fore-knees; and sometimes they

\* General Carnac, in some observations which he favoured me with upon this subject, says, " All of the deer kind have  
 " the sense of smelling very exquisite. I have frequently ob-  
 " served of tame deer, to whom bread is often given, and  
 " which they are in general fond of, that if you present them  
 " a piece that has been bitten, they will not touch it. I have  
 " made the same observation of a remarkable fine she-goat,  
 " which accompanied me most of my campaigns in India; and  
 " supplied me with milk, and which, in gratitude for her ser-  
 " vices, I brought from abroad with me."

would

would do so when I came before them; but, as they never darted, I so little thought this posture meant hostility, that I rather supposed it expressive of a timid or obsequious humility\*.

**FEMALE.** The *Female* differs so much from the *Male*, that we should scarcely suppose them to be the same species. She is much smaller, both in height and thickness. In her shape, and in her yellowish colour, she very much resembles deer; and has no horns. She has four nipples, and is supposed to go nine months with young. She commonly has one at a birth, and sometimes twins.

The young male Nyl-ghau is like the female in colour, and therefore like a Fawn.

**SPECIES.** When a new animal is presented to us, it will often be difficult, and sometimes impossible, to determine its species, by the external characters alone. But when such an animal is dissected by an anatomist, who is a master in comparative

\* The intrepidity and force with which they dart against any object may be conceived from the following anecdote, of the finest and largest of those animals that has ever been seen in England. The violence which he did to himself, was supposed to occasion his death, which happened soon after. A poor labouring man, without knowing that the animal was near him, and therefore neither meaning to offend, nor suspecting the danger, came up near to the outside of the pales of the inclosure; the Nyl-ghau, with the quickness of lightening, darted against the wood work, with such violence, that he broke it to pieces; and broke off one of his horns close to the root. From this piece of history and farther inquiry, I was satisfied that the animal is vicious and fierce in the rutting season, however gentle and tame at other times.

anatomy, the question is commonly to be decided with certainty.

From the external marks alone, I suspected, or rather believed, the Nyl-ghau to be a peculiar and distinct species. Some of my acquaintance thought it a deer. The permanent horns convinced me that it was not. Others thought it an antelope. The horns, and the size of the animal, made me suspect that it was not. It had so much of the shape of deer, especially the female, that I could not suppose it to be of the same species with our black cattle. In rutting time, one of the males was put into a paddock with a female of the red-deer: but nothing like attraction or attention was observed between them. At length, in consequence of the death of one of them, I was assured by my brother, who dissected it, and who has dissected with great attention almost every known quadrupede, that the Nyl-ghau, is a new species\*.

**HISTORY.** Of late years several of this species, both male and female, have been brought to England. The first were sent from Bombay, by Gov. Cromelen, as a present to Lord Clive: they arrived in August 1767. They were male and female, and continue to breed every year. Afterwards two were brought over, and presented to the Queen by Mr. Sullivan. From her Majesty's desire to encourage every useful or curious enquiry in natural knowledge,

\* Mr. Pennant, whose love of natural history heightens the enjoyment of an independent fortune, in his *Synopsis*, published since this paper was written, classes this animal (*White-footed*, p. 29.) as a species of the *Antelope*; but he now thinks it belongs to another *Genus*, and will class it accordingly in his next edition.

I was

I was permitted to keep these two for some time; which enabled me to describe them, and to get a correct picture made; and, with my brother's assistance to dissect the dead animal, and preserve the skin and skeleton. Lord Clive has been so kind to give me every help that he could furnish me with, in making out their history; so has General Carnac, and some other gentlemen.

At all the places in India, where we have settlements, they are rarities, brought from the distant interior parts of the country, as presents to Nabobs and great men. Lord Clive, General Carnac, Mr. Walsh, Mr. Watts, and many other gentlemen, who have seen much of India, tell me they never saw them wild. So far as I have yet found, Bernier is the only author who has even mentioned them \*. In the 4th Vol. of his *Memoires*, he gives an account of a journey which he undertook, ann. 1664, from Delhi, to the province of Cachemire, with the Mogul Aurengzeb, who went to that terrestrial paradise, as it is esteemed by the Indians, to avoid the heat of the summer. In giving an account of the hunting, which was the Emperor's amusement in this journey, he describes, among others, that of *le Nylghau*; but without saying more of the animal, than

\* Since the reading of this paper, I have received the following information from Dr. Maty. In the fourth Volume of Valentyn's description of the East Indies, published in Low Dutch, 1727, under the article of Batavia, p. 231, I find amongst the uncommon animals kept at the castle, this short indication, "There was a beast, of the size and colour of a Danish ox, but less heavy, pointed towards the mouth, ash-grey, and not less than an Elk, whose name he bore." It was a present from the Mogul.

that the Emperor sometimes kills them in such numbers, as to distribute quarters of them to all his Omrachs; which shews that they were there wild, and in plenty, and esteemed good or delicious food.

This agrees with the rarity of these animals at Bengal, Madrafs, and Bombay: for Cachemire is the most northern province of the Empire; and it was on the march from Delhi to that place, that Bernier saw the Emperor hunt them.

NAME. The word *Nyl-ghau*, for these are the component letters corresponding to the Persian, though pronounced as if it were written *Neel-gaw*, signifies a blue cow, or rather a bull, *Gaw* being masculine; and the male animal of that name has a good title to the appellation, as well from the likeness he bears in some parts to that species of cattle; as from the bluish tinct which is very discernible in the colour of his body; but this is by no means the case with the female, which has a near resemblance, as well in colour as in form, to our red deer. The *Nyl-ghaus* which have been brought to England have been most, if not all, of them received from Surat or Bombay; and they seem to be less uncommon in that part of India, than in Bengal; which gives room for a conjecture that they may be indigenous perhaps in the province of Guzarat, one of the most Western and most considerable of the Hindustan empire, lying to the Northward of Surat, and stretching away to the Indian ocean.

A gentleman \* who has been long in India, and has an extensive acquaintance there, has written to

\* General Carnac, who likewise favoured me with the preceding article upon the name of the animal.

his

his friends, to collect all the intelligence they can possibly procure concerning this animal; and in the course of the next year, some satisfactory information may perhaps be received from thence, though the natives of that country, he says, have no turn whatever after natural history; and indeed are very little inquisitive after any kind of knowledge.